

**SAMPLE
SSST MATHEMATICS ENTRANCE EXAM**

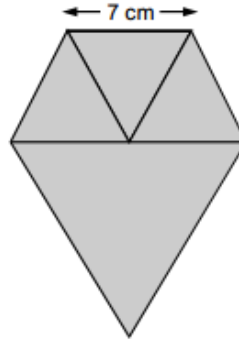
Departments of ECONMICS

Duration: 1,5 hours
Use of calculators: Allowed

Good luck!

Question 1.

Tatjana has three small equilateral triangles and one large equilateral triangle. The length of the sides of the small triangles is 7 centimeters. Tatjana makes this shape:



Calculate the perimeter of the shape.

Question 2.

Simplify the following complex number expression

$$\left(\frac{1}{2} + \frac{3}{4}i\right) \left(\frac{1}{2} - \frac{3}{4}i\right)$$

and obtain its imaginary part:

- a) $\frac{1}{2}$
- b) $-\frac{3}{4}$
- c) $\frac{3}{4}$
- d) $-\frac{1}{2}$

Question 3.

Find the set of all real solutions for the following inequality:

- a)
- b) $-\infty, \infty)$
- c)
- d) $-\infty, \infty)$

Question 4.

Find all the solutions of the following equation:

Question 5.

Ado has _____ at the start of February. On the first of February he gets 2 *KM* more. Every following day he gets _____ more than the day before and every fourth day (starting from the fourth of February) he gets a bonus of *KM*. How much money does Ado have at the beginning of March?

Question 6.

Solve the following equation:

Question 7.

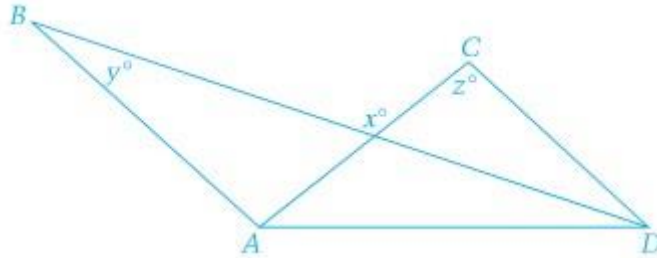
Simplify the following equation:

Question 8.

- a) If two dice are rolled, find the probability that the sum is equal to 4.
- b) A bag contains 6 marbles: 2 red marbles, 1 yellow marble, and 3 blue marbles. If you take one marble out and put it back, and then take another marble out, what is the probability that you will get 1 blue marble followed by 1 yellow marble?

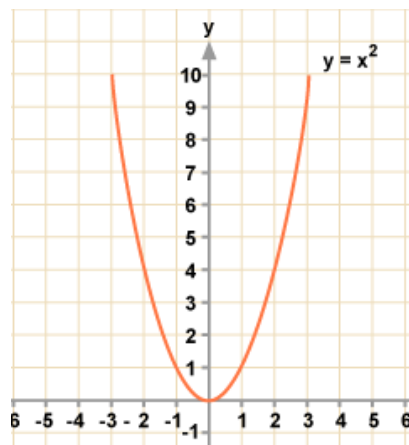
Question 9.

In the following figure, \overline{AB} and \overline{CD} are parallel. Evaluate the angle x in terms of angles y and z ?



Question 10.

Graph _____ is shown in the following figure:



Sketch the graph of function _____ 1.